Phytochemical and Antimicrobial Activity of *Salvadora persica* (Miswak) against Some Animal Pathogens.

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BACKGROUND

One of the common problems in the medical world, spreading of bacterial resistance against antibiotics, *Salvadora persica has* biological active compounds and used in traditional medicine, it seems that this plant contain considerable antimicrobial capacity.

OBJECTIVE

the aim of this study is to investigate the antimicrobial activity of *Salvadora persica* aqueous extracts on some medically important animal pathogens and to determine some phytochemical compounds.

INTRODUCTION

In the present time , due to a large number of chemical antibiotic were costly and exhibit side effect therefore, the award people are turning towards herbal antimicrobial(Abd El-Latif, *et al*,2002*)*. Various components of *Salvadora persica* have been reported to have beneficial biological properties, including significant antibacterial and antifungal activity(Al-Bagieh, *et al*., 1994.). Prophet Mohammed (PBUH) recommended Muslims to use Siwak five times a day, as he said "if I had not found it hard for followers or the people, I would have ordered them to clean their teeth with Miswak prior to each pray" (Al-Bukhari ,2004).

MATERIALS AND METHODS

Collection of plant materials: (Miswak) were obtained from the local market at Cairo City, Egypt, 2014.

Aqueous extraction: Distilled water and dried plants was boiled, mixed by the blender , filtered and kept at 4°C until to be use.

MATERIALS AND METHODS

Preparation of inoculums: The strains of bacteria(*Staphylococcus epidermis, Escherichia coli ,Streptococcus pyogens, Pseudomonas aerogenes, Salmonella typhimurium, Enterococcus, Bacillus cereus, Klebsiella pneumoniae)* & fungi (*C. albicans)* were isolated from large animals and poultry farms on the outskirts of Cairo . then inoculated on Sabaroud dextrose agar .

4-Antimicrobial screening: The agar well diffusion method was used for the determination of antibacterial activity of Salvadora *persica* (Miswak) aqueous extracts .[1]

5- Phytochemical Tests:

Tannins Test and AlkaloidsTest: was done according to [2].

Saponins Test, Flavonoids Test and Glygosides Test: were done according to [3]..All chemicals used (Purchased from Witan – Biolife Company produced by Jalil Medicals Company).

THE RESULTS

The aqueous extract is the most effective against Ps. *aerogenes* and *B.* cereus followed by *Enterococcus , K. pneumonia and S.epidermis* cold aqueous extract showed significant antibacterial activity against, .While the ether extract did not show any significant antibacterial *S. typhimurium ,S.pyogens , and E. coli*. Also the extract showed high antifungal effect against *C. albicans* .Phytochemical screening indicated that the aqueous extract most abundantly contained only tannins and saponins as shown in Table(2)

THE RESULTS CONT.

Table 1 : Antimicrobial activity of Salvadora *persica* (Miswak) aqueous extract against some animal pathogen in (mm).

Type of extract → / Type of M.O. ↓		A.E	C.	B.	N.
G -	*E .c*	0	20	17	0
	S.	0	30	22	0
	E.	12	35	30	0
	Ps.	13	30	22	0
G +	*B.*	13	34	36	0
	S .e.	11	25	33	0
	S.p .	0	0	30	0
	K.	12	38	39	0
F .	*C .a.*	26	0	0	16

An abbreviations
A.E= Aqueous extract, C= ciprofloxacin, B= Bacitracin, N= Nystatin (control –ve was distilled water all =0)
E.c= E.coli,S.=Salmonella,Ps= Pseudomonas. aerogins,B= Bacillus cerus, S.e.= strept. Epidermis, S.p.=Strept pyogens, K.=Klebsiella, C.a= Candida albicans, F=Fungi.

Table 2: The phytochemical compounds in Salvadora *persica* (Miswak) aqueous extract

+ (contain this phytochemical compound)

THE RESULTS CONT.

Plant extracts Phytochemical tests	Salvadora *persica*
Flavonoids Test	-
Alkaloids Test	-
Glygosides Test	-
Saponins Test	+
Tannins Test	+

CONCLUSIONS

So it could be concluded that the *S. persica* extract exhibited remarkable antimicrobial activity against microbial pathogens and can be introduced as an alternative to chemical antimicrobial drugs, but required wider investigation.

REFERANCES

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